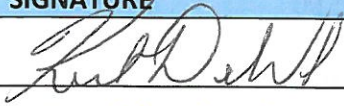
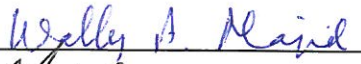


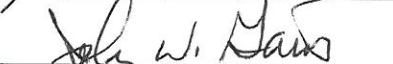
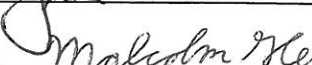
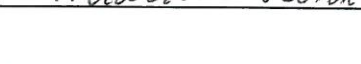


# Non-Load-Test Sling Request Form

## REVISION LOG

| REV | DESCRIPTION                                  | DATE |
|-----|--|------|
|     | TOSC Heavy Equipment General Purpose Rigging |      |

## APPROVALS

| TITLE          | NAME            | ORG          | SIGNATURE  | DATE      |
|----------------|-----------------|--------------|--|-----------|
| D{GS Mgr II    | Kent DeWit      | USA<br>95800 |    | 1/29/2013 |
| USA HEE        | Wally Majid     | USA<br>95820 |    | 1/30/2013 |
| USA H.E. F.L.M | Mark Smith      | 95820        |    | 1/30/2013 |
| NASA GP-63     | Robert D. Moore | 6P-63        |    | 1/30/2013 |
| USA MAE        | James D. Blake  | USA<br>92013 |    | 1/29/13   |
|                | John Garrett    |              |   |           |
| KSC UDEM       | Malcolm Glenn   | SA-<br>62    |  | 2/5/13    |
|                |                 |              |  |           |
|                |                 |              |  |           |
|                |                 |              |  |           |
|                |                 |              |  |           |
|                |                 |              |  |           |

## SLING INFORMATION

|   |                                      |
|---|--------------------------------------|
| SLING NAME: Heavy Equipment General Purpose Rigging |                                      |
| PMN: N/A  | S/N:                                 |
| OTHER IDENTIFIER (e.g. DWG #): Vendor catalogs      |                                      |
| DATE OF REQUEST:                                    | REQUESTING ORG: USA Heavy Equip Engr |

**DESCRIPTION OF THE PERIODIC LOAD TEST THAT WILL NOT BE PERFORMED**

The annual load test of the TOSC Heavy Equipment General Purpose Rigging will not be performed; reference paragraph 10.3.2 of the NASA Lifting Standard NASA-STD-8719.9.

**10.3.2 Periodic Load Test.** Slings shall undergo periodic load tests at least every 4 years at a specific load test factor of the design rated load as given in Table 10-3. All components shall be tested together as a system, if practical. Slings used for critical lifts shall be load tested at least once per year. Slings used infrequently for critical lifts shall be load tested before each critical lift if it has been over a year since the last load test. Lifting interfaces such as eyebolts, D-rings, and lifting lugs permanently attached to the load are exempt from periodic load testing.

Table 10-3 Periodic Load Test Factors. (Based on Manufacturers' Rated Load)

Equipment Periodic Load Test Factor

Alloy Steel Chain Slings 1.00

Wire Rope Slings 1.00

Metal Mesh Slings 1.00

Synthetic Rope Slings 1.00\*

Synthetic Web Slings 1.00

Linear Fiber Slings 1.00

Structural Slings 1.00

Shackles, D-rings, Turnbuckles, Eye Bolts, Lifting Lugs, Safety Hoist Rings, etc. 1.00

\* Critical lift rope slings of synthetic material shall not be used beyond 50 percent of the manufacturer's rating to maintain an equivalent design factor in the load system.

**SLING DESCRIPTION****General:**

General purpose rigging includes various types of rigging in the Rigging Trucks and the High Crew Shop. The Rigging Truck hardware includes shackles, nylon and wire rope grommets, nylon straps, wire rope slings, hooks, twin path slings, nylon slings, eyebolts, beam clamps, hoist rings and turnbuckles. The High Crew Shop equipment includes shackles, nylon slings and wire rope slings. All equipment is uniquely identified and tagged, including safe working load and date of most recent annual inspection.

**Design Standards:**

All rigging is 'off-the-shelf' and complies with the NASA Lifting Standard, NASA-STD-8719.9, OSHA, ASME and equivalent DIN standards.

**Design Factors:**

All rigging meets the design factors in Table 10-1 of the NASA Lifting Standard, NASA-STD-8719.9, and is in accordance with ASME, OSHA and equivalent DIN standards. The typical design factor for such hardware is 5 to 1.

**Material/Construction Properties:**

Steel, wire rope, nylon and synthetic materials.



**SLING USAGE****Operational History:**

Daily use and as needed. There have been no operational issues with this rigging over the years. Any time a piece of rigging fails an inspection; it is destroyed and removed from service.

**Maintenance History:**

1. Wire rope and nylon slings are inspected in accordance with OSHA, ASME B30.9 and NASA-STD-8719.9 and prior to use.
2. Shackles, adjustable rigging items (turnbuckles, eyebolts, & hoist rings) are inspected in accordance with ASME, B30.26 & NASA-STD-8719.9 and prior to use.
3. Hooks are inspected per ASME B30.10 & NASA-STD-8719.9 and prior to use.
4. Annual inspections are performed per an approved Job Plan.
5. Inspections are performed by experienced and trained personnel, from the Heavy Equipment Shop.
6. All equipment is visually inspected before use and annually. A metal tag is installed after the annual inspection.

**Test History:**

All items were initially proof load tested per NASA Lifting Standard requirements, typically at 2 times the safe working load.

**Sling Rated Load versus Actual Load:**

Rigging can be used up to 100% of rated load which is typically 20% of breaking strength.

**Storage Provisions:**

All rigging items are stored in a dry covered truck; i.e., the rigging truck. All High Crew Shop rigging is stored inside.

**Planned Future Use:**

Continue to support Ground Processing.

**RATIONALE FOR NON-PERFORMANCE**

**NOTE: If any of this rationale changes after approval, it is the responsibility of the requesting organization to contact the LDEM, re-submit a non-load-test request form and/or request removal of the sling from the non-load test sling list. Additionally any item on the non-load test sling list is subject to periodic review by the LDEM.**

1. Defects can be detected during inspection of the slings; inspected before use and annually.
2. Deterioration is prevented by storing items in a dry covered area.
3. An annual inspection is being performed in lieu of the annual load test. Experience at KSC is that such rigging will be removed from service by failing an inspection, long before failing a periodic load test.

**Describe the risks, if any, of not performing the load test and how they will be mitigated:**

The risk of not performing the load test is unexpected failure of the equipment. The mitigations are the before use and annual periodic inspections.

**ADDITIONAL INFORMATION**